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protein 51
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## ALIGNMENTS

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A;Molecule type: protein
A;Nolecule type: protein
A;Nosidues: 1-32,'N',34-43 <MAO>
A;Note: the authors suggest that their identification of 33-Asn is correct and that present a natural variant of hirudin
C;Comment: Hirudin is a potent + hormalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         G;Comment: Hirudin is a potent thrombin-specific protease inhibitor. G;Superfamily: thrombin inhibitor C;Reywords: anticoagulant; sulfoprotein F;6-14,16-28,22-39/Disulfide bonds: #status experimental F;63/Binding site: sulfate (Tyr) (covalent) #status experimental
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A; Accession: A94429
A; Moleculo Armania 
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C;Date: 30-Nov-1980 #sequence_revision 03-Aug-1984 #text_change 07-May-1999
C;Accession: A91318; A94429; A60811; A01289
R;Dodt, J.; Muller, H.P.; Seemuller, U.; Chang, J.Y.
FEBS Lett. 165, 180-183, 1984
RESULT 2

$05674

hirudin IIb - medicinal leech

N;Alternate names: thrombin ir

C;Species: Hirudo medicinalis
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A;Title: Rapid purification and revised amino-terminal sequence of hirudin: a space and a space 
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A;Accession: A91318
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A; Residues: 1-65 < DOD>
R; Petersen, T.E.; Roberts,
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A; Residues: 1-65 < PET>
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Pred. No. 7.8e-30;
1; Mismatches
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A; Title: Primary structures of new 'iso-hirudins' A; Reference number: S05671; MUID:90005945; PMID:2 A; Accession: S05673
                                                                                                                       N;Alternate names: thrombin inhibitor
C;Species: Hirudo medicinalis (medicinal leech)
C;Date: 21-Nov-193 #sequence_revision 10-Nov-1
C;Accession: S05673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C;Superfamily: thrombin inhibitor
C;Keywords: anticoagulant; serine proteinase inhibitor; sulfoprotein
F;6-14,16-28,22-39/Disulfide bonds: #status predicted
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A;Residues: 1-65 <SCH>
C;Superfamily: thrombin inhibitor
C;Keywords: anticoagulant; serine proteinase inhibitor; sulfoprotein
F;6-14,16-28,22-39/Disulfide bonds: #status predicted
F;63/Binding site: sulfate (Tyr) (covalent) #status predicted
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A;Title: Primary structures of new 'i
                                                                                     R;Scharf, M.; Engels, J.; Tripier, D. FEBS Lett. 255, 105-110, 1989
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hirudin IIa -
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FEBS Lett. 255, 105-110, 1
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C;Date: 17-Jul-1998 *sequence_revision 17-Jul-1998 *text_change
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C;Accession: S05674
               A; Molecule
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type: protein : 1-65 <SCH>
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Pred. No. 4e-29;
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C;Superfamily: thrombin inhibitor
C;Keywords: anticoagulant; serine proteinase inhibitor; sulfoprotein
F;6-14,16-28,22-39/Disulfide bonds: #status predicted
F;63/Binding site: sulfate (Tyr) (covalent) #status predicted
                                                                                                                                                                                             R:Scharf, M.; Engels, J.; Tripier,
FEBS Lett. 255, 105-110, 1989
A;Title: Primary structures of new
A;Reference number: S05671; MUID:99
                                                                                                                                                                                                                                                                     N;Alternate names: thrombin inhibitor
C;Species: Hirudo medicinalis (medicinal leech)
C;Date: 17-Jul-198 #sequence_revision 17-Jul-1
C;Accession: S05678
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C; Keywords: anticoagulant; serine
                                                                                                                                              A; Molecule type: protein A; Residues: 1-65 < SCH>
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MUID:90005945; PMID:2792365
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5; Mismatches
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s: #status predicted
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2; Mismatches
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                  Score 348;
Pred. No. 1.
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1.3e-28;
2;
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N;Alternate names: thrombin inhibitor
C;Species: Hirudo medicinalis (medicinal leech)
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 17-Jul-1998
C;Accession: $78520
R;Scharf, M.; Engels, J.; Tripler, D.
FEBS Lett. 255, 105-110, 1989
A;Title: Primary structures of new 'iso-hirudins'.
A;Reference number: $05671; MUID:90005945; PMID:2792365
A;Accession: $78520
A;Molecule type: protein
A;Residues: 1-65 <SCH>
C;Superfamily: thrombin inhibitor
C;Superfamily: thrombin inhibitor
C;Superfamily: thrombin inhibitor
C;Reywords: anticoagulant; serine proteinase inhibitor; sulfoprotein
F;6-14,16-28,22-39/Disulfide bonds: #status predicted
F;63/Binding site: sulfate (Tyr) (covalent) #status predicted
                                                                                                                                                                                                   A;Title: Primary structures of new 'iso-hirudins'.
A;Reference number: $05671; MUID:90005945; PMID:2792365
A;Recession: $05677
A;Molecule type: protein
A;Residues: 1-65 <SCH>
C;Superfamily: thrombin inhibitor
C;Superfamily: thrombin inhibitor
C;Keywords: anticoagulant; serine proteinase inhibitor;6-14,16-28,22-39/Disulfide bonds: #status predicted
F;63/Binding site: sulfate (Tyr) (covalent) #status pred
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C;Species: Hirudo medicinalis (medicinal leech)
C;Date: 21-Nov-1993 #sequence_revision 10-Nov-19
C;Date: 20-Nov-1993 #sequence_revision 10-Nov-19
C;Accession: S05677
R;Scharf, M; Engels, J; Tripler, D.
FEBS Lett. 255, 105-110, 1989
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hirudin IIIb - medicinal leech
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3; Mismatches
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Pred. No. 2.
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N;Alternate names: thrombin inhibitor
C;Species: Hirudo medicinalis (medicinal leech)
C;Date: 21-Nov-1993 #sequence_revision 10-Nov-1
C;Accession: 805675
R;Scharf, M.; Engels, J.; Tripier, D.
FEBS Lett. 255, 105-110, 1989
    thrombin inhibitor (hirudin) type II precursor - medicinal leech (fragment) C;Species: Hirudo medicinalis (medicinal leech) C;Date: 28-Apr-1993 #sequence_revision 28-Apr-1993 #text_change 16-Jul-1999 C;Accession: A37417 R;Harvey, R.P.; Degryse, E.; Stefani, L.; Schamber, F.; Cazenave, J.P.; Cou Proc. Natl. Acad. Sci. U.S.A. 83, 1084-1088, 1986
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C;Species: Hirudo medicinalis (medicinal leech)
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1
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R; Scharf, M.; Engel:
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Stefani,
.. 83, 1084
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Pred. No. 2.6e-28;
Pred. No. 2.6e-28;
                                                                                                                                                                                                                                                                                                                                                                       Score 343; DB 2;
Pred. No. 4.1e-28;
6; Mismatches 0;
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                       J.P.; Courtney,
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A; Molecule type: protein
A; Residues: 1-55 <SCH>
C; Superfamily: thrombin in
C; Keywords: anticoagulant;
F; 6-14/Disulfide bonds: #s
F; 53/Binding site: sulfate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Dodt, J.; Machleidt, W.; Seemuller, U.; Maschler, R.; Fritz, H.
Biol. Chem. Hoppe-Seyler 367, 803-811, 1986
A;Title: Isolation and characterization of hirudin isoinhibitors and sequence analysis A;Reference number: A24350; MUID:87026247; PMID:3768144
A;Accession: A24350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                thrombin inhibitor (hirudin PA) - medicinal leech
N;Alternate names: hirudin (plasminogen activator-type)
C;Species: Hirudo medicinalis (medicinal leech)
C;Date: 31-Mar-1988 #sequence_revision 31-Mar-1988 #text_change 18-Jun-1993
C;Accession: A24350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Title: Cloning and expression of a cDNA coding for the anticoagulant hirudin A;Reference number: A37417; MUID:86149219; PMID:3513162
A;Refession: A37417
A;Status: preliminary; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-72 <HAR>
                                                                                                                                                                        A; Title: Primary structures of new 'iso-hirudins'. A; Reference number: S05671; MUID:90005945; PMID:2792365 A; Accession: S05672
                                                                                                                                                                                                                             C;Accession: S05672
R;Scharf, M.; Engels, J.; Tripler,
FEBS Lett. 255, 105-110, 1989
                                                                                                                                                                                                                                                                             hirudin I - medicinal leech (fragments)
N;Alternate names: thrombin inhibitor
C;Species: Hirudo medicinalis (medicinal leech)
C;Date: 21-Nov-1993 #sequence_revision 10-Nov-1
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A; Residues: 1-66 < DOD>
C; Superfamily: thrombin inhibitor
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                                                                  Keywords: anticoagulant; serine proteinase inhibitor; sulfoprotein; 6-14/Disulfide bonds: #status predicted; 53/Binding site: sulfate (Tyr) (covalent) #status predicted
                                                                                                                        Superfamily: thrombin inhibitor
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nilarity 81.5%;
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nilarity 87.1%;
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Score 288; DB Pred. No. 1.3e 1; Mismatches
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Pred. No. 2.9e-25;
4; Mismatches 4;
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                   .3e-22;
                                     DB 2;
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C; Superfamily:
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C;Species: Hirudinaria manillensis
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 16-Jul-1999
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R;Electricwala, A.; Hartwell, R.; Scawen,
J. Protein Chem. 12, 365-370, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            hirudin HV1 homolog bufrudin - leech (Hirudinaria manillensis)
C;Species: Hirudinaria manillensis
C;Date: 27-Sep-1994 *sequence_revision 18-Nov-1994 *text_change
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A;Residues: 1-84 <SCA>
A;Cross-references: EMBL:X72786; NID:g312674; PIDN:CAA51293.1; PID:g312675
                                                                                                                                                                                                                                                                   A;Title: Novel hirudin variants from the leech Hirudinaria manillensis. Amino acid se A;Reference number: S33328; MUID:93285156; PMID:7685281 A;Accession: S33329
                                                                                                                                                                                                                                                                                                                R;Scacheri, E.; Nitti, G.; Valsasina, Eur. J. Biochem. 214, 295-304, 1993
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n inhibitor
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                                                                                                Score 247; DB 2;
Pred. No. 2.7e-18;
5; Mismatches 10
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Pred. No. 1.3e-18;
8; Mismatches 11
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